

Opinion & Analysis

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Wind power could provide answer

Perhaps you've seen them around town or on campus — curious bumper stickers proclaiming, "Wind Power Saves Water." You've probably mumbled, "What does that mean?" As Utah and other

intermountain western states contemplate strategies for navigating through a fifth year of drought, its surprising there's been little debate about water use for electricity generation. Because electricity is so familiar and basic to our daily existence, frequently we take it for granted and rarely think about where it comes from or what resources are needed to generate it. According to a recent Hewlett Foundation Energy Series report at www.westernresourceadvocates.org, however, coal and natural gas steam power plants in the eight-state interior West currently withdraw more than 650 million gallons of water every day. Annually, this is the equivalent to the municipal water demands of nearly four million people.

The bumper sticker message is part of a Utah Energy Office campaign designed to educate Utahns about the water-saving opportunities posed by wind power development in the state.

Guest
Column

Edwin Stafford



Utah has no wind farms and no current plans to build any. Encouraging wind power development, however, can help reduce the energy sector's water demands.

Water use for power generation can be a divisive local issue, and conflict over water interests is destined to grow more intense. Utah's population is expected to grow 70 percent over the next three decades, requiring expanded power generation capacity. The additional water commitments for these new power plants will likely create conflict over how this limited resource is allocated, particularly if the drought persists.

How is water used for electricity generation? Water is heated to make high-pressure steam to rotate turbines for generating electricity. Water also purges boilers and washes stacks. Water's primary use, however, is for cooling and condensing hot steam back into water. Most Utah power plants use "re-circulating" cooling systems that reuse water. While they withdraw less

water than "once through" cooling systems, they can consume more water per megawatt hour (MWh) of electricity produced (a MWh is about the amount of electricity a typical Utah home consumes every month). The Hewlett Foundation report indicates that on average Utah power plants consume about 800 gallons of water for each MWh produced.

The drought has exacerbated the situation by limiting hydropower output throughout the West, placing increased reliance on coal and natural gas steam plants, which also draw on limited water resources. Sadly, Utah and most other western states don't have other types of power plants to conserve water. Encouraging wind power development could help. Aside from periodic washing of blades, wind turbines consume virtually no water in their operations.

Wind power also provides other benefits — it's clean and increasingly cost-effective. Wind is inexhaustible and has

no fuel costs. Because wind power costs are based primarily on the up-front expenses of installing wind turbines and equipment, prices are stable and predictable. This can help moderate overall energy prices in the face of soaring natural gas prices. Moreover, as evidenced in Texas, Wyoming, and other western states, wind power is a lucrative "cash crop" for rural communities, providing wind royalties to landowners, jobs, and economic opportunities for local businesses in the construction and operation of wind farms. This, in turn, can bolster local tax revenues to support schools and local services. Given the drought's devastation to rural Utah, wind power development could bring much-needed economic, environmental, and water-saving opportunities.

Can wind power meet all of Utah's future energy needs and solve Utah's drought problems? No. Coal-fired plants will continue to be a key energy source, and other water and energy conservation measures are needed to mitigate future water conflicts. Wind, however, must be part of the solution. Wind power can diversify Utah's energy resources, temper water consumption, and provide an economic boost to drought-stricken rural communities. So, next time you think about water conservation, consider turning off your lights or air conditioner. Better yet, support wind energy development in Utah.

Edwin Stafford and Cathy Hartman are marketing professors at Utah State University. Christine Watson is an energy engineer at the Utah Energy Office. For more information about the opportunities for wind power in Utah, see www.wind.utah.gov.

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